

Committee on Resources

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Statement of

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on

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Mr. Chairman and Members of the Committee, thank you for inviting me to speak before you today about the role of technology in the offshore oil and gas industry. My name is Tom Fry, and I am the President of the National Ocean Industries Association, which represents nearly 300 companies working to explore for and produce energy resources from the nation's Outer Continental Shelf (OCS) in an environmentally sensitive manner.

Through the development and application of technology, the companies of the offshore industry continue to improve their ability to bring new supplies of oil and natural gas online. Over the last fifty years, these companies have learned how to operate in deeper and deeper waters and locate resources that were once not accessible. At the same time, the technological advances pioneered by these companies have allowed for less impact on the environment and a wise stewardship of the resources beneath the ocean.

The United States' Outer Continental Shelf (OCS) is conservatively estimated by the Minerals Management Service to hold undiscovered technically recoverable resources of over 419 trillion cubic feet of natural gas and 86 billion barrels of oil.

That's estimated to be enough natural gas to heat 100 million homes for 60 years, and enough oil to drive 85 million cars for 35 years or to replace current Persian Gulf imports for almost 60 years.

In fact, there may be even more than that. In the parts of the Gulf of Mexico where we have been allowed to buy leases and explore, we have produced three times as much oil and natural gas as we once thought was there. In 1984, MMS estimated that the Gulf of Mexico held 6 billion barrels of oil and 60 trillion cubic feet of natural gas; yet, after producing steadily for 22 years, the Gulf is now estimated to have 45 billion barrels of oil and 232 trillion cubic feet of gas remaining. The more we explore, the more we know. Imagine the potential of those places where exploration has been off-limits for over 25 years.

These are significant resources that can be developed safely and that we ignore to our consumers' disadvantage. Yet today, more than 85 percent of the nation's OCS around the lower 48 states is off limits to oil and gas exploration because of presidential withdrawals and congressional moratoria, even though over 7 billion barrels of oil has been produced from the OCS since 1985 with less than .001 percent seeping into the ocean from drilling and extraction.

A Source of Constant Technological Innovation

Today's offshore technology allows us to produce more energy by reaching places that would never before have been possible. New records are always being set.

Wells drilled on the Outer Continental Shelf of the Gulf of Mexico are typically considered "deep" when drilled below the depth of 15,000 feet. The technology required to drill, complete and produce this type of well must overcome an environment of high pressure (in excess of 20,000 pounds per square inch) and high temperature (exceeding 350°F). Deep wells such as this are expensive, costing as much as \$100 million each.

After coming from the ground, the oil or natural gas then travels through a pipeline where the temperature is just above freezing and the formation of ice crystals threatens to block the flow unless constantly supervised and adjusted. At depths far beyond where humans can travel, sometimes as much as 5,000 feet or more below the surface, Remotely-Operated Vehicles (ROVs) are used to perform maintenance and repairs.

Transocean's Discoverer Deep Seas set a world record in 2003 by drilling a well in water depths exceeding 10,000 feet. That's the equivalent of successfully navigating nearly two miles down from the surface of the ocean before even beginning to drill.

All this is possible with fewer facilities and less impact – even visual -- than ever before. For example, multiple subsea wells can be connected by tiebacks to a single platform over great distances. Such an installation, if overlaid on a map of the Washington, DC area, would reach as far north as Columbia, MD and as far South as Mechanicsville, VA, and connect to a platform one mile above the city.

This cutting edge technology doesn't come cheap, however. The total cost of this type of project, including wells drilled and the subsea connection system, will often exceed \$2 billion.

An Exemplary Record of Environmental Protection and Stewardship

The outstanding environmental record of U.S. companies operating offshore around the world is well recognized as *...technologies are allowing the offshore industry to venture into deeper waters than ever before, while protecting marine life and subsea habitats...* -- even in the most challenging areas such as the Arctic and North Sea and in otherwise catastrophic weather.

Off the part of our coast in which exploration and production is allowed, the safety of our operations was recently demonstrated in the most severe hurricane situations. Though many of the exploration and production facilities in the Gulf of Mexico were severely damaged or destroyed, the high-tech safety and environmental protection equipment and processes worked.

Here's a brief look at why we can be proud of our environmental record.

Careful scientific environmental study and operational planning always precede such activity. For example, our offshore geophysical companies, which conduct seismic work that allows us to "see" geologic structures beneath the seabed, have worked with the National Marine Fisheries Service and the Minerals Management Service to implement many procedures and practices designed to avoid harm to marine mammals, including:

- Monitoring for the presence of animals of concern
- Shutdown or no start-up when they are too close
- Slow, gradual ramp-up of operations just in case

During exploration, jack-up or semi-submersible rigs and drill ships have multiple systems and physical barriers to ensure that no spill occurs. Most important, along with multiple, redundant remote control systems, are "blowout preventers" which for deepwater wells are installed on the well at the seabed and are capable of immediate closure in event of any emergency.

Once a field has been discovered and is in the development or production stage, completed wells flow through permanent "Christmas tree" systems – increasingly on the seabed for subsea developments as opposed to on a surface facility -- of multiple valves to control oil and gas flow. These may be operated from tens or even a hundred miles away with multiple, redundant communication systems.

Finally, a "downhole safety valve" is installed in the well itself below the seabed to provide an added protection barrier in the event of some catastrophic event damaging the Christmas tree.

As a result of these safeguards, the offshore oil and gas industry has a laudable environmental record.

Further proof of the safety of today's offshore oil and natural gas production comes from the 2002 National Academy of Sciences Report "Oil in the Sea III," which finds that although the amount of oil produced and transported on the sea continues to rise, improved production technology and safety training of personnel have significantly reduced both blowouts and daily operational spills. In fact, the report states, accidental spills from platforms represent less than 1 percent of petroleum inputs in U.S. waters.

The industry remains under intense scrutiny by its two primary regulators —

the MMS and the U.S. Coast Guard— as well as a host of other governmental agencies with oversight responsibilities such as the Environmental Protection

Agency and the National Oceanic and Atmospheric Administration. However,

it is the MMS that regulates all exploration, development, and production

activities on about 8,000 active leases to ensure that these activities are conducted safely and in an environmentally sound manner. The MMS reviews and approves industry exploration and development plans before allowing any operations to commence, monitors all lease operations to ensure that industry is in compliance with relevant requirements, and conducts scheduled and unscheduled inspections. In 1997, MMS conducted over 12,000 inspections of OCS facilities.

To summarize, the latest technology and sound management practices not only allow for the continued production of domestic energy resources, but they have also made the U.S. offshore industry the envy of the world. Its environmental record is superb:

- Since 1985, more than 7 billion barrels of oil were produced in federal offshore waters with less than 0.001 percent spilled — a 99.999 percent record for clean operations.
- There has not been an incident involving a significant oil spill from a U.S. exploration and production platform in 25 years (since 1980).
- Government statistics show that the injury and illness rate for offshore workers is about 70 percent lower than for all of private industry.
- Today's modern technology includes such environmental protections as automatic subsea well shut-in devices, including sub-seabed safety valves.
- 30 percent of the 15 million fish caught by recreational fishermen annually off the coasts of Texas and Louisiana are caught near platforms.

As mentioned earlier, the industry's performance during last summer's hurricanes, which moved through a core area of offshore operations, is instructive. While it is true that 115 platforms were destroyed, the storm threatened over 3,000 facilities, the vast majority of which survived. Despite sustained winds reaching 170 miles per hour and towering waves and the resulting destruction of numerous platforms and rigs, there was no significant spill from production wells and no injury or loss of life among the 25,000 – 30,000 workers who are offshore at any given time.

Because today's weather forecasting capabilities provide ample lead-time as storms approach, operators are able to follow routine shutdown and evacuation procedures. In the case of the Katrina and Rita hurricanes, 100% of oil production was shut-in ahead of the storms.

Conclusion

The offshore oil and natural gas industry will continue to make advances in the development of new technologies, and these advances will allow us to keep bringing reliable supplies of energy to market while also ensuring the safe and efficient management of the nation's energy resources.

Thank you for allowing me to be here with you today.

Clinton Administration DOE report: *Environmental Benefits of Advanced Oil and Gas Exploration and Production Technology*, 1999.